

## **WHAT IS CLAIMED IS:**

1. A computer system for selectively retrieving runtime objects in an application development environment, comprising:
  - a plurality of server runtime objects;
  - a plurality of local runtime objects, each local runtime object including a generation setting associated with generation of the respective local runtime object; and
  - a generator component responsive to a request for a requested runtime object by being configured to retrieve a valid copy of the requested runtime object from the plurality of local runtime objects if therein, and to otherwise retrieve the valid copy of the requested runtime object from the plurality of server runtime objects if therein.
2. The system of claim 1, wherein the generator component is configured to invalidate a local runtime object when the local runtime object's generation setting does not match current generator settings.
3. The system of claim 1, wherein the generator component retrieves the local runtime object by being configured to return a data element indicating the requested local runtime object's validity.
4. The system of claim 1, further comprising a local database including a first data structure and a second data structure, the second data structure configured to store a plurality of pointers, at least one pointer configured to identify a local runtime object from the plurality of local runtime objects, the first data structure configured to store a plurality of commands, the commands configured to manipulate the second data structure.
5. A computer system for selectively retrieving runtime objects in an application development environment, comprising:
  - a server database configured to store a plurality of server runtime objects;
  - a local database configured to store a plurality of local runtime objects; and

a generator component configured to include a first generator and a second generator, each provided in communication with each other and the server and local databases,

the generator component configured to invalidate and validate server and local runtime objects, to retrieve server and local runtime objects in response to requests therefor, and to regenerate requested runtime objects,

the first generator configured to perform a first portion of the generator component's tasks, the second generator configured to perform a second portion of the generator component's tasks.

6. A computer system for retrieving stored runtime objects in an application development environment, comprising:

a local database to store a plurality of pointers and a plurality of local runtime objects,

at least one local runtime object from the plurality of local runtime objects including a content, a state, and an original checksum attribute,

the original checksum attribute configured to represent a combination of the content and the state of the local runtime object with which the original checksum attribute is associated,

at least one pointer configured to identify, from the plurality of local runtime objects, a local runtime object including an original checksum attribute,

the at least one pointer configured to include a copy of the original checksum attribute associated with the local runtime object that the at least one pointer is configured to identify; and

a generator component to, in response to a request for a local runtime object:

calculate a new checksum attribute associated with the requested local runtime object,

compare the requested local runtime object's new checksum attribute to its pointer's copy of the original checksum attribute,

invalidate the requested local runtime object when the new checksum attribute and the copy of the original checksum attribute do not match, and

retrieve the requested local runtime object if the requested local runtime object remains valid.

7. A computer system for selectively retrieving runtime objects in an application development environment, comprising:
  - a server database configured to store a plurality of server runtime objects;
  - a local database configured to store a plurality of local runtime objects, each local runtime object from the plurality of local runtime objects configured to correspond to one server runtime object from the plurality of server runtime objects; and
  - a generator component responsive to a request for a requested runtime object by being configured to retrieve the requested runtime object from the plurality of local runtime objects if the plurality of local runtime objects includes a copy of the requested runtime object that corresponds to a valid server runtime object, and to retrieve the valid server runtime object from the plurality of server runtime objects otherwise, if therein.
8. The system of claim 7, wherein
  - at least one local runtime object from the plurality of local runtime objects and at least one server runtime object from the plurality of server runtime objects contain a content attributes and a state attributes, and wherein
  - the each local runtime object corresponds to the one server runtime object when the each local runtime object's content attributes and state attributes match the one server runtime object's content attributes and state attributes.
9. A computer-implemented method for selectively retrieving runtime objects in an application development environment, comprising:
  - storing a plurality of server runtime objects;
  - storing a plurality of local runtime objects, each local runtime object including a generation setting associated with generation of the respective local runtime object; and
  - responding to a request for a requested runtime object by retrieving a valid copy of the requested runtime object from the plurality of local runtime objects if therein, and

otherwise by retrieving the valid copy of the requested runtime object from the plurality of server runtime objects if therein.

10. The method of claim 9, further comprising:
  - invalidating a local runtime object when the local runtime object's generation setting does not match current generator settings.
11. The method of claim 9, wherein the local runtime object is retrieved by returning a data element indicating the requested local runtime object's validity.
12. The method of claim 9, further comprising:
  - storing a plurality of pointers, at least one pointer identifying a local runtime object from the plurality of local runtime objects; and
  - storing a plurality of commands, the commands manipulating the plurality of pointers.
13. A computer-implemented method for retrieving runtime objects in an application development environment, comprising:
  - storing a plurality of pointers;
  - storing a plurality of local runtime objects, at least one local runtime object from the plurality of local runtime objects including a content, a state, and an original checksum attribute,
    - the original checksum attribute representing a combination of the content and the state of the local runtime object with which the original checksum attribute is associated,
    - at least one pointer identifying, from the plurality of local runtime objects, a local runtime object including an original checksum attribute,
    - the at least one pointer including a copy of the original checksum attribute associated with the local runtime object that the at least one pointer identifies; and
  - responding to a request for a local runtime object by:

calculating a new checksum attribute associated with the requested local runtime object,

comparing the requested local runtime object's new checksum attribute to its pointer's copy of the original checksum attribute,

invalidating the requested local runtime object when the new checksum attribute and the copy of the original checksum attribute do not match, and

retrieving the requested local runtime object if the requested local runtime object remains valid.

14. A computer-implemented method for selectively retrieving runtime objects in an application development environment, comprising:

storing a plurality of server runtime objects;

storing a plurality of local runtime objects, each local runtime object from the plurality of local runtime objects capable of corresponding to one server runtime object from the plurality of server runtime objects; and

responding to a request for a requested runtime object by:

retrieving the requested runtime object from the plurality of local runtime objects if the plurality of local runtime objects includes a copy of the requested runtime object that corresponds to a valid server runtime object, and by retrieving the valid server runtime object from the plurality of server runtime objects otherwise, if therein.

15. The method of claim 14, wherein

at least one local runtime object from the plurality of local runtime objects and at least one server runtime object from the plurality of server runtime objects contain a content attributes and a state attributes, and wherein

the each local runtime object corresponds to the one server runtime object when the each local runtime object's content attributes and state attributes match the one server runtime object's content attributes and state attributes.